

services.^{24/} If these claims have any merit whatsoever, the Commission should certainly expect future productivity gains to outstrip the paltry 1.7% differential productivity growth found in the Christensen Associates study.

Second, as the Christensen Associates Report notes, variations in the quantity of output sold (e.g., minutes of use) play a significant role in the achieved productivity of the LECs. Due to economies of scale and density, volume growth alone can produce substantial productivity gains, even without stringent LEC cost-cutting efforts.^{25/} Curiously, the LECs insist that output changes will work against their future productivity gains, because competition will diminish LEC market shares.^{26/} However, it is not market share, but absolute volume of output that determines whether the LECs will continue to benefit from scale-economy-driven productivity improvements.

Experience in the interstate toll markets has shown that it is perfectly possible for a dominant firm (such as AT&T) to lose market share and still experience a growing absolute volume of calling on its network, partly due to the stimulation of demand by lower, more competitive pricing and partly due to upward shifts in

^{24/}Robert G. Harris, Testimony in Support of Pacific Bell's Section 214 Applications for Video Dialtone Service to Orange County, Southern San Francisco Bay, Los Angeles, and San Diego (File Nos. W-P-C 6913-16, filed Dec. 20, 1993), Exhibit 3 at 8, 12.

^{25/}Christensen Associates Report at 13.

^{26/}See, e.g., Comments of Pacific Bell and Nevada Bell at 31-32.

the "demand curve" for telecommunications services as business and residential customers find new and higher value uses for telecommunications.²⁷¹ Over the next three to four years, competitors will still be in the early stages of building out their networks and signing up new customers, while the LECs will benefit from their incumbent advantages and from demand growth as the economy continues to emerge from the recession of the early 1990s. Over the longer run, the LECs will share in the demand growth associated with the multitude of new telecommunications applications that this Commission and the LECs themselves have projected as the National Information Infrastructure becomes a reality. As traffic builds on the "information superhighway," the LECs' "lanes" are certain to be heavily used.

In short, while past is always prologue to the present, historical productivity growth may be a poor predictor of probable future productivity performance. The deployment of new technologies and the continued growth in demand for the LECs' services, even in the face of competitive inroads into their market share, suggest that "normal" productivity growth in the future could easily outstrip the experience since divestiture.

²⁷¹USTA has provided helpful documentation of the growth in telecommunications purchases in selected industries over the past ten years. See Dr. Robert G. Harris, "Economic Benefits of LEC Price Cap Reforms," USTA Comments, Attachment 2, Appendix A, Table A-1 at page A-3 (hereinafter referred to as Harris Report).

2. Contrary to USTA's Claims, an Increase in the Productivity Factor Would Not Sap LEC Incentives for Efficiency Gain or Endanger LEC Investment in the National Information Infrastructure

On behalf of USTA, Dr. Robert G. Harris has urged the Commission to "[i]ncrease incentives for LECs' efficiency and innovation by adopting a realistic productivity offset."^{28/} Later, he makes clear that, in his view, a "realistic" productivity offset is one that excludes a "stretch" or "consumer dividend" factor.

There is no economic rationale for incorporating a "stretch" factor in the price cap mechanism: the price cap plan ensures that consumers continue to benefit from normal productivity gains (with shareholders receiving the benefits of above average performance). In competitive (unregulated) industries, firms do not share the benefits of above average performance with their customers.^{29/}

Moreover, the "normal" productivity gains that Dr. Harris apparently has in mind are in the range of the low 1.7% per year differential productivity gains estimated by Christensen Associates for the 1984-1992 period.

Dr. Harris's claim that higher productivity factors have an adverse effect on LEC incentives is refuted by the analysis of marginal efficiency incentives performed by Strategic Policy Research on behalf of U.S. West. Although Strategic Policy Research expresses reservations about the willingness of LECs to accept a regulatory bargain that includes a "consumer dividend" in the productivity factor, it concedes that the "consumer dividend" does not adversely affect LEC incentives for efficient behavior.

^{28/}Id. at 2.

^{29/}Id. at 25.

The Consumer Dividend does not in any way dull (marginal) efficiency incentives. The firm commits to adjust prices in accordance with a productivity commitment (including the Consumer Dividend) that is fixed in advance and does not depend on its actual efficiency gains. Thus, any incremental gains or losses in economic efficiency relative to the productivity commitment flow directly to the firm's bottom line. Since incentives remain fully intact, the Consumer Dividend does not reduce the efficiency gains that can be expected, once the company is operating under price caps.^{30/}

In fact, higher productivity factors may actually increase LEC incentives to become more efficient. Many economists believe that firms are better characterized as profit "satisficers" rather than profit "maximizers."^{31/} According to this theory, firms strive to achieve a "satisfactory" level of profits, but do not undertake the often-difficult steps that would be necessary to go from "satisfactory" to "maximum" profits.^{32/} Increasing the productivity factor forces "satisficing" firms to go after a larger share of potential efficiency gains in order to achieve "satisfactory" profits. Thus, a "satisficing" firm will perform

^{30/}Strategic Policy Research, "Regulatory Reform for the Information Age," U.S. West Comments, Attachment 5 at page 18.

^{31/}Nobel laureate Herbert Simon is credited with originating the "satisficing" theory of microeconomic behavior. See Herbert Simon, "Theories of Decision-Making in Economics and Behavioral Science," American Economic Review (June 1959) at 253-83.

^{32/}Although it reaches different conclusions about the effect on LEC incentives, the Strategic Policy Research report sponsored by U.S. West aptly describes the difficulties inherent in "maximizing" profits by becoming more efficient. "Efficiency gains generally involve changing established ways of doing business and the frustrating process of learning how to operate efficiently under the new conditions. Workers incur personal costs, as they may have to be retrained, relocated or laid off." U.S. West Comments, Attachment 5 at page 15.

better (i.e., be more efficient) if the Commission adopts an aggressive productivity target.

Whether one subscribes to the more traditional profit-maximization hypothesis or the alternative profit-satisfaction theory of firm behavior, it is clear that higher productivity factors have no adverse impact on LEC efficiency incentives. As this analysis demonstrates, the Commission need not allow fears of diluted incentives to deter it from maintaining or even increasing the productivity factor in the price-cap formula.

Nor should the FCC accept Dr. Harris's related argument that the productivity factor must be kept low so as to stimulate LEC investment in the "information superhighway."^{33/} Not only do the LECs have an ample flow of internally generated cash with which to finance such investment,^{34/} they have ready access to the capital markets as well. Companies with AA and AAA bond ratings should have little trouble raising capital in a period of low inflation and relatively low interest rates.

The FCC must reject this obvious effort to relink rates with LEC investment. Although Dr. Harris asserts that price-caps place the risk of investment in the National Information Infrastructure ("NII") solely on LEC shareholders,^{35/} this claim is undermined by

^{33/}Harris Report at 25.

^{34/}As noted above, ETI has documented that the LECs' investments in their local networks over the price-cap period have not even kept pace with their depreciation earnings. ETI Report at 67. Under these circumstances, it is hard to see how LEC investment was constrained by low earnings.

^{35/}Harris Report at 21.

his plea "that the Commission recognize the explicit connection between the size of the [productivity] adjustment factor and the incentive of LECs to invest in the telecommunications infrastructure."^{36/} All other things being equal, a Commission decision to reduce the productivity factor so as to encourage LEC investment in the infrastructure would be tantamount to requiring ratepayers to provide the funding and bear the risk of that investment. Not only is this approach contradictory to the fundamental premises of price-cap regulation, it amounts to little more than a tax on the general public to fund the NII—exactly the opposite of the Administration's policy (which Dr. Harris elsewhere cites approvingly) calling for private investment in a "network of networks."

C. The FCC Must Retain the Sharing Mechanism to Ensure That Consumers Receive Their Fair Share of the Efficiency Gains Attributable to Price-Cap Regulation

The LEC commenters uniformly call for the Commission to adopt a "pure" price-cap mechanism, without any sharing or low-end adjustment mechanisms. Their reasoning is twofold. First, the LECs observe that the Commission originally adopted the sharing mechanism as a hedge against the possibility that the productivity adjustment factor was set too low. With the additional information now available regarding the post-divestiture TFP experience, these parties believe that the Commission can be confident that the revised productivity adjustment factor adopted as a result of this

^{36/}Id. at 25.

proceeding is sufficiently accurate that no "safety net" or hedge is needed.

Second, the LECs correctly note that the current price-cap structure retains some of the perverse incentives associated with traditional cost-of-service regulation. The sharing mechanism, which requires the LECs to refund 50% of earnings above an established threshold, gives the LECs an incentive to "spend" revenues that would otherwise be shared with customers to fund below-cost prices for competitive services or simply to cover costs that would be deemed excessive if shareholders bore the entire burden of the expense. The low-end adjustment mechanism, which provides for automatic rate adjustments if LEC earnings fall below an established floor, shifts some of the risk of poor performance and bad business judgment from shareholders back to ratepayers. As USTA observed,

under the current price cap plan, if a LEC reduces prices in more competitive markets, or simply loses business there, the LEC's overall interstate earnings may be depressed sufficiently to activate the low-end adjustment mechanism. This, in turn, would give the LEC the ability to raise prices in less competitive markets.^{37/}

While the LECs would have the Commission believe that the sharing mechanism has lost its purpose and that its elimination would be an unambiguous improvement in the price-cap formula, the truth is far more complex. As discussed in Section II(B) above, the sources of uncertainty regarding the appropriate productivity factor may have increased, rather than decreased, over the past

^{37/}USTA Comments at 51-52 (footnote omitted).

three years. Historical productivity data cannot resolve the uncertainties above future productivity levels when network technology, demand and competition levels are all in a state of flux. Thus, the Commission's original rationale for adopting a sharing mechanism is every bit as applicable now as it was at the outset of price-cap regulation: we simply do not know enough to set a fair productivity factor with reasonable certainty. Ratepayers are entitled to some built-in protection against an overly generous price-cap formula.

The case for retaining sharing is especially compelling if the Commission reduces the productivity factor to the 1.7% estimate sponsored by USTA. The risk of windfall LEC profits, unjustified by exemplary performance, would be overwhelming. Such a low productivity estimate would mean that expected LEC performance under price-caps would be at or below the historical average productivity gains that the industry has achieved since the 1930s under traditional cost-of-service regulation.^{38/} To earn their full benchmark ROR, the LECs would have to obtain only half or less of the productivity gains for which they were held responsible over the past three years — and largely managed to achieve, in spite of the demand-dampening effects of a severe economic recession. And they would be held accountable for these diminished expectations in

^{38/}Supplemental Notice of Proposed Rulemaking, CC Docket 87-313 (released March 12, 1990), Appendix D, "Total Telephone Productivity in the Pre and Post Divestiture Periods," by T.C. Spavins and J.M. Lande. The FCC staff analysis in this report indicated that telecommunications productivity growth had exceeded economy-wide productivity growth by 1.7 to 2 percent over the 1930-1989 period.

a period of steady economic growth while they are deploying new local network technologies that allegedly will save substantial costs.

If the Commission is persuaded by the LECs' arguments that sharing must be eliminated to enhance incentives for LEC efficiency, then it must guarantee upfront that consumers will receive their fair share of the productivity gains that should follow such a move. The best way to restore the balance between ratepayer and shareholder interests would be to adopt a sizable increase in the productivity target. Again, this approach has precedent in the recent California intrastate price-cap review decision. The CPUC increased the productivity factor for Pacific Bell's price-cap mechanism from 4.5% to 5.0%. This increase was balanced in part by the replacement of an absolute earnings cap (which previously had been set at 500 basis points above the "market-based" rate of return) with a more generous sharing mechanism that allows Pacific Bell to retain 70% of earnings above the upper threshold.^{39/} The CPUC reached this decision after considering a proposed decision from the assigned Administrative Law Judge to eliminate the sharing mechanism entirely, but to adopt a productivity factor of 6.0%.^{40/}

^{39/}CPUC Decision No. 94-06-011 at 2. The CPUC retained a 50/50 sharing formula for earnings falling between 150 and 500 basis points above the "market-based" rate of return.

^{40/}Although the CPUC expressed strong interest in this approach, it felt that parties had not yet had a full opportunity to comment on the implications of eliminating the sharing mechanism.

The height of the price-cap hurdle and the need for sharing are inextricably linked. A productivity "hurdle" that asks no more of the LECs than to duplicate the modest productivity gains achieved under 60 years of cost-of-service regulation virtually guarantees that consumers will be no better off under price-caps than under traditional regulation. Sharing then is the absolute minimum necessary to convince customers that price-cap regulation is anything other than a sham designed to maximize the LECs' earnings under a minimum of regulatory scrutiny. A productivity "hurdle" that pushes the LECs to exceed even the best historical performance under cost-of-service regulation offers certain ratepayer benefits and obviates much of the need for sharing.

III. THE FCC MUST NOT ALLOW THE LECs TO MANIPULATE THE SHARING CALCULATION THROUGH THE USE OF INAPPROPRIATELY ACCELERATED DEPRECIATION RATES AND MUST HOLD THE LINE ON EXCLUDING DEPRECIATION CHANGES FROM THE FACTORS FOR WHICH THE LECs MAY SEEK AN "EXOGENOUS COST" ADJUSTMENT TO THE PRICE-CAP FORMULA

In our opening comments, CCTA urged the Commission to continue its policy of excluding changes in depreciation rates from the list of factors for which the LECs can seek an "exogenous cost" adjustment to the rates otherwise produced by the price-cap index. MCI sounded the same theme, reciting extensive Commission precedent for exclusion of depreciation expenses from exogenous cost treatment and underlining the "endogenous" nature of depreciation.

Reiteration of its policy not to grant exogenous treatment to depreciation expenses will confirm the Commission's basic belief that the underlying decision that drive depreciation rates result from business strategies for which the LECs must be willing to face the financial consequences.^{41/}

No party recommended that depreciation changes be included among the eligible "exogenous cost" factors. CCTA, therefore, believes this issue can now be put to rest.

Instead, the LECs' comments focused on their desire to eliminate the FCC's role in prescribing depreciation rates. Their position was linked to their recommendation to eliminate the sharing and low-end adjustment mechanisms. Under their recommended "pure price-caps" approach, the LECs reason, there is no need for the FCC to involve itself in the determination of depreciation rates because the level of depreciation rates will have no effect on the rates consumers pay. As Pacific Bell put it,

Eliminating earnings limitations would also permit decisions about placing and retiring plant to be made solely for business reasons. Costs that we incur due to early retirement of plant could be treated endogenously, and realistic depreciation lives could be allowed without fear that we would use them to manipulate rates or sharing.^{42/}

Whether or not the LECs' position has any abstract merit if the sharing and low-end adjustment mechanisms are eliminated, it is entirely untenable under a currently realistic price-cap framework that includes those two mechanisms. The LECs' linkage of the elimination of depreciation rate prescription with the elimination

^{41/}MCI Comments at 45.

^{42/}Comments of Pacific Bell and Nevada Bell at 48.

of sharing is tacit acknowledgement that depreciation rate prescription must continue as long as the sharing and low-end adjustment mechanisms are part of the price-cap framework. Otherwise, the LECs could unjustifiably accelerate their depreciation rates and thereby reduce reported earnings, either to avoid sharing excess earnings with ratepayers or to make themselves eligible for an upward rate adjustment under the low-end adjustment mechanism.

As discussed in Section II(C) above, CCTA believes that the sharing mechanism continues to provide essential ratepayer protections against misspecifications of the price-cap parameters and should be retained. Therefore, the FCC must continue its active involvement in the prescription of depreciation rate changes.

IV. EMERGING COMPETITION FOR LEC SERVICES IS NOT SUFFICIENTLY EXTENSIVE TO WARRANT A RELAXATION OF THE FCC'S REGULATORY SCRUTINY OF THE LECs AT THIS TIME

A recurring theme in the LECs' comments is the assertion that competitive forces will suffice to discipline the LECs' pricing behavior in the future, justifying a reduced level of regulatory scrutiny and price control. Although each of the LECs offers its own litany of examples of the intense competition that it allegedly faces, the most complete exposition of the LECs' claims regarding the level of competition is found in an appendix to Dr. Robert G. Harris's report on behalf of USTA. Dr. Harris concludes "that LECs currently face competition in many key service areas and that

competition to LECs in full-network services is likely to emerge rapidly."^{43/}

The Harris analysis, like the more general discussions of competition contained in the LEC comments themselves, is as noteworthy for what it omits as for what it contains. While it is rich in discussions of the number and type of potential competitors that the LECs face, it is devoid of data on the actual market share obtained by any or all of these competitors to date. Although he cites the 43% expansion of Competitive Access Provider ("CAP") revenues between 1992 and 1993 and the potential for those revenues to triple between 1993 and 1996, even Dr. Harris concedes that "the percentage of CAP revenues relative to LEC operating revenue remains small."^{44/} Dr. Harris never tells us how small CAP revenues are relative to LEC operating revenue. Time Warner reveals, however, that 1993 CAP revenues were less than one percent of LEC access services revenues.^{45/} This stark statistic makes clear that we are still talking about *potential*, rather than *actual* competition.

Given the very limited inroads that competitors have made into even the high-capacity, non-switched services market, and the regulatory barriers that still preclude dialtone competition in nearly every jurisdiction, the level of competition clearly falls far short of the competitive forces that would be necessary to

^{43/}Harris Report, Appendix B, at B-1.

^{44/}*Id.* at B-5 - B-6.

^{45/}Initial Comments of Time Warner Communications at 9.

justify further reductions in the level of FCC oversight of the LECs' ratesetting process. At most, the Commission should take this opportunity to specify the type of objective evidence of competition that it would require before taking any further steps to relax its regulatory oversight of the LECs.

The Commission may want to consider establishing guidelines similar to those embodied in the Cable Act of 1992. Under the Cable Act, a cable system can justify complete deregulation if a competitor offers service to at least 50 percent and serves more than 15 percent of the households in its franchise area. USTA calls for a lesser standard to justify total pricing flexibility — the availability of competitive service for only 25 percent of the carrier access services market. Its economic experts, Drs. Richard Schmalensee and William Taylor, cite a number of differences between the cable and carrier access services markets to justify the less rigorous standard for removal of pricing restrictions on LEC access services, including the ubiquitous availability of self-supply of dedicated access services by end-users or interexchange carriers ("IXCs").⁴⁶ They fail to note, however, that virtually every cable customer has access to at least one "free" competitive alternative to cable services — broadcast programming. Thus, the consequences that a cable customer faces due to lack of availability of a competitive cable provider are quite different

⁴⁶Richard Schmalensee and William Taylor, "Comments on the USTA Pricing Flexibility Proposal," USTA Comments, Attachment 4, at 34-35.

from the consequences that toll customers and IXCs face due to lack of availability of a competitive access provider.

Because even the LECs' experts admit there is no "magic" level of either market share or the availability of competitive alternatives that guarantees pricing flexibility will not be abused,^{47/} and because the expanded interconnection needed to make self-supply a viable alternative^{48/} is far from fully implemented, the FCC should initially set criteria for granting complete pricing flexibility using more conservative parameters than those embodied in the USTA proposal. CCTA believes that the market share and availability of competitive alternatives criteria set forth in the Cable Act of 1992 are a reasonable starting point for granting LEC pricing flexibility. In the next price-cap review, the FCC could review the experience under the Cable Act standards and determine whether liberalized pricing flexibility would be in the public interest.

V. CONCLUSION

Price-cap regulation offered the LECs greater pricing freedom and the opportunity to earn higher returns than were allowable under traditional cost-of-service regulation. In exchange, customers were to be guaranteed lower prices than they would otherwise have received, and competitors were to be assured that the LECs would not be able to leverage their market power for

^{47/}Id. at 33.

^{48/}Id. at 9.

price-cap-regulated services to gain an unfair advantage in competitive services markets. Thus far, the LECs have obtained their share of the regulatory bargain. Customers, however, are still waiting to see price reductions beyond those that would have been compelled by either traditional cost-of-service regulation or competitive forces. Competitors also confront the prospect that the LECs will succeed in obtaining a lower productivity factor (and thus higher monopoly rates) to finance their forays into competitive markets.

The FCC must act decisively in this first price-cap review to restore the balance in the price-cap framework. Rather than providing the LECs with even more revenues and pricing freedom, the Commission must fine-tune the price-cap parameters to pass through a higher share of the benefits to customers through a lower benchmark ROR, adjustment of the sharing and low-end adjustment mechanism thresholds, a one-time rate reduction and an increase in the productivity factor. The Commission must also retain the sharing mechanism and continue to prescribe depreciation rates so

that the LECs cannot manipulate the shareable earnings calculation. CCTA urges the Commission to adopt the recommendations contained in its initial and reply comments.

Respectfully submitted,

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June 29, 1994

D29274.1

REPLY AFFIDAVIT OF TERRY L. MURRAY

I. QUALIFICATIONS AND PURPOSE OF TESTIMONY

My name is Terry L. Murray. I am an economist and the principal of the consulting firm Murray & Associates in San Francisco, California. I received a Bachelor's degree from Oberlin College, majoring in economics, and undertook graduate studies in economics at Yale University, where I was advanced to Ph.D. candidacy and completed all requirements for the Ph.D. except the dissertation. My areas of concentration were industrial organization and energy and environmental economics. Prior to becoming a consulting economist in 1990, I was employed by the California Public Utilities Commission ("CPUC") in a variety of capacities, culminating in my appointment as the Director of the CPUC's Division of Ratepayer Advocates, its expert trial staff. In nearly all my positions at the CPUC I had significant responsibility for telecommunications matters. Since leaving the CPUC, I have served as an expert witness in several telecommunications proceedings, both in California and elsewhere, including the CPUC's recent docket concerning rate realignment in anticipation of the elimination of regulatory barriers to intraLATA competition and the first triennial review of the CPUC's price-cap regulatory framework for Pacific Bell. I have presented expert testimony on cost of capital issues in a number of telecommunications, energy and insurance regulation proceedings. I have also taught undergraduate and graduate courses on economics and regulatory policy at Wesleyan University and Golden Gate University. A copy of my current curriculum vita is attached as Exhibit 1 to this affidavit.

I have been asked by the California Cable Television Association ("CCTA") to address the rate of return issues raised in the opening comments and supporting affidavits filed in this docket on May 9, 1994. I have participated in the review of those comments, and my views are

reflected in the Reply Comments that are being filed by CCTA as to each of the points made by CCTA in those Reply Comments.

In particular, I have reviewed the cost of capital analysis presented by Matthew I. Kahal on behalf of MCI Telecommunications Corporation to determine whether it provides an accurate assessment of the LECs' cost of capital. I find that Mr. Kahal has presented the most credible estimate of the LECs' cost of capital in this proceeding and that his results provide an appropriate basis on which the FCC can reset the benchmark rate of return.

II. REVIEW OF KAHAL COST OF CAPITAL ANALYSIS

Mr. Kahal has reviewed three components of the LECs' cost of capital: (1) the cost of equity; (2) the embedded cost of debt; and (3) the capital structure. Because he has used the actual reported embedded debt cost and capital structure of the seven Regional Bell Operating Companies ("RBOCs"), there can be no controversy regarding these components of the analysis. (I note, however, that Mr. Kahal only had the 1992 embedded debt cost available at the time of his original filing. This figure almost certainly overstates the current embedded debt cost for the LECs due to the extensive refinancings that took place during the low-interest-rate environment of 1993. This figure should be part of Mr. Kahal's update in this round of comments.)

As always, the estimated cost of equity is the component of Mr. Kahal's analysis that is most open to controversy. Mr. Kahal relied on the widely accepted Discounted Cash Flow ("DCF") model to estimate the cost of equity. Overall, his DCF analysis follows commonly

principles and conventions and is consistent with the approach that this Commission relied upon in setting the original 11.25% benchmark rate of return in the first price-cap order.¹

Indeed, my only objection to Mr. Kahal's analysis is that he has *overstated* the investor-required return on equity for the LECs by using an excessively high estimate of the dividend growth rate component of the DCF formula. Mr. Kahal relied on the I/B/E/S five-year *earnings* growth rate projections for the LECs as a proxy for the long-term *dividend* growth rate component of the DCF formula.² Use of a forecasted earnings growth rate as a proxy for the dividend growth rate is frequently rationalized on the basis that these two growth rates must converge in the long-run. However, this long-run convergence between dividend and earnings growth rates does not hold for periods as short as five years.

In general, LECs maintain a relatively steady rate of dividend growth even though earnings increase and decrease over a business cycle. During a period of economic recovery, earnings growth outstrips dividend growth, and *vice versa*. Although it is not possible to determine whether the I/B/E/S forecasters expect earnings growth to exceed dividend growth over the next five years (because that investment analysis service does not provide dividend growth rate forecasts), an examination of *Value Line*'s most recent growth rate forecasts for the RBOCs indicates that at least that prominent investment analysis source expects earnings to grow

¹Statement of Matthew I. Kahal Concerning Cost of Capital on behalf of MCI Telecommunications Corporation, hereinafter referred to as "Kahal Testimony."

²The classic single-growth-rate DCF formula states that the investor-required return on equity equals the sum of the forward dividend yield (the dividend for the next four quarters divided by the current stock price) and the long-term dividend growth rate expected by investors. In applying this formula, rate of return analysts must choose an estimate of the investor-expected dividend growth rate.

almost twice as rapidly as dividends over a five-year horizon and expects earnings growth to outstrip dividend growth for every RBOC except Ameritech, for which the two estimates are almost equal. *See* Table 1. Thus, because the growth rate estimates that Mr. Kahal used in his DCF analysis tend to overstate expected dividend growth rates, I consider Mr. Kahal's DCF results to set an upper bound on the likely market cost of equity for the LECs.

One final aspect of Mr. Kahal's cost of capital analysis deserves note. Although he followed the basic DCF methodology that the Commission used in setting the original price-cap benchmark ROR, Mr. Kahal chose to exclude certain adjustments that the Commission had previously applied to the DCF results on which it had relied in 1990. One of these adjustments was intended to compensate for the alleged failure of analysts' growth rate forecasts to incorporate the full effect of expected growth in cellular earnings that are included in the LECs' stock prices.³ In the recent California intrastate price-cap review proceeding, I analyzed the evidence presented by Pacific Bell witness Dr. James Vander Weide in favor of this cellular adjustment. My review revealed that, if anything, the DCF results for the RBOCs *overstate* the required return on equity for their LEC operations due to the higher risk (and therefore higher required return) associated with their cellular operations. Based on the California record, the CPUC concluded that "the [cellular] adjustment is neither appropriate nor proper in magnitude."⁴ Therefore, I strongly support Mr. Kahal's exclusion of the cellular adjustment from his estimate of the LECs' cost of capital.

³Kahal Testimony at 14.

⁴CPUC Decision 94-06-011 (June 8, 1994) at 52.

Mr. Kahal also excluded the adjustment by which the Commission used the highest of the estimated RBOC costs of equity capital, rather than the average result. Again, his choice to exclude this adjustment is consistent with sound methodological procedures. DCF estimates of the cost of equity capital for individual firms will vary somewhat around the "true" cost of capital to these firms. Absent any reason to believe that the variations in the individual RBOCs' DCF results are attributable to differences in the perceived riskiness of these companies (a result belied by the narrow range of the various risk measures presented in Mr. Kahal's testimony), it is probable that the variation in the DCF results merely represents random "noise" in the data used to calculate the DCF estimate of the cost of equity. Under these circumstances, Mr. Kahal is absolutely on point in observing that "[w]ith the adder for variation, consumers on average will pay for an excessive cost of equity embedded in rates and the LECs will be over compensated."⁵ Thus, I concur that the appropriate estimate for the equity component of the cost of capital calculation is the average DCF result.

As a matter of public policy, Mr. Kahal was also correct to exclude the "infrastructure adder" of 0.2 percent that the Commission had included in the original benchmark rate of return.⁶ Certainly, this adder has nothing to do with the LECs' cost of equity capital. Moreover, there is no guarantee that the LECs will "spend" the bonus return dollars on desired infrastructure upgrades. Finally, giving the LECs a bonus return to fund infrastructure improvements enables the LECs to gain an anticompetitive advantage relative to competitive access providers, interexchange carriers and other firms that operate in competitive markets and

⁵*Id.* at 15.

⁶*Id.*

lack the ability to charge monopoly customers higher rates to fund their infrastructure improvements. The FCC should exclude the "infrastructure adder," as well as the other two adders that Mr. Kahal has eliminated from his estimated cost of capital.

Overall, I find Mr. Kahal's analysis to provide the most useful estimate in this record of the cost of capital for LECs. Because Mr. Kahal has indicated his intention to update his DCF analysis in the reply round of this proceeding, I shall not duplicate his analysis and instead recommend that the FCC rely on the updated results of Mr. Kahal's analysis in setting the new benchmark ROR for the next price-cap period.

I have read the foregoing Affidavit and being duly sworn, depose and say this is true and accurate to the best of my knowledge and belief.

Terry L. Murray
Terry L. Murray

SWORN TO AND SUBSCRIBED BEFORE ME
THIS 28th DAY OF JUNE, 1994

J. Burns
Notary Public

My commission expires 5-2-97



TABLE 1
EARNINGS PER SHARE ("EPS") VS.
DIVIDENDS PER SHARE ("DPS") GROWTH RATES

COMPANY	EPS GROWTH	DPS GROWTH
Ameritech	8.0%	8.5%
Bell Atlantic	6.5%	2.0%
BellSouth	9.5%	4.0%
NYNEX Corp.	6.0%	3.0%
Pacific Telesis	4.0%	1.5%
Southwestern Bell	9.5%	4.5%
U.S. West	7.5%	1.5%
Average	7.3%	3.6%

Source: *Value Line Investment Survey*, April 15, 1994.

TERRY L. MURRAY

Principal and Founder, Murray and Associates

Nationally recognized expert on economics of regulated industries. Provides expert witness services and performs strategic studies on behalf of clients regarding economic and policy issues concerning the telecommunications, electric, gas and insurance industries. Areas of specialization include competition policy, pricing and costing, incentive regulation and cost of capital.

Director of Regulatory Economics, Morse, Richard, Weisenmiller & Associates, Inc. April 1990 - April 1992

Provided analysis and expert witness services in both civil litigation and state regulatory proceedings before state regulatory commissions regarding resource planning and environmental issues, telecommunications policy and pricing issues, incentive regulation and cost of capital.

California Public Utilities Commission. June 1984 - April 1990

Director, Division of Ratepayer Advocates (DRA). Headed a staff of 210 analysts who testified on behalf of ratepayers in contested proceedings involving electric, gas, telecommunications and transportation utilities. Represented ratepayer viewpoint at legislative and other public forums.

Program Manager, Energy Rate Design and Economics Branch, DRA. Managed a staff of over 30 analysts who testified on costing, pricing, and sales forecasting for electric and gas utilities and total factor productivity issues for electric, gas and telecommunications utilities. Policy witness in major electric and transportation regulation proceedings.

Senior Policy Analyst, Policy and Planning Division. Served as the Commission's lead advisor on telecommunications policy. Initiated investigation regarding incentive regulation for local exchange carriers. Chaired a Commission task force on open network architecture issues.

Advisor to Commissioner Victor Calvo. Provided expert analysis and policy recommendations on all areas of Commission regulation. Served as lead advisor on Qualifying Facility issues.

Analyst, Public Staff Division. Testified on cost of capital and telecommunications issues. Served on a Commission task force regarding state regulatory responses to changes in telecommunications industry.

Instructor, Golden Gate University, San Francisco, CA, 1987.

Taught courses on telecommunications regulation in the Masters in Telecommunications Management program.

Acting Assistant Professor of Economics, Wesleyan University, Middletown, CT. 1981-1982.

Taught courses on economic theory, econometrics and regulatory economics.

EDUCATION

M.A., M.Phil., Economics, Yale University. (Completed all requirements for the Ph.D. except dissertation.) Areas of specialization include energy and environmental economics and regulatory and antitrust economics.

A.B., Economics, Oberlin College.